

# **EXHIBIT 13**

# BIOFILM in Washers

Indorf Update - 24 January 2005

## Learnings:

- Machine
- Consumer
- Platforms

Real & Perceived  
Human Safety

Class-Action Law  
Suit & Internet

**ISSUES:**Material  
Compatibility  
- Chlorine reality

Intellectual  
Properties

Corrective  
Actions  
One-Chance

Competitors  
- ALL washers  
- HE > Risks

Next Steps:  
Maintenance & Clean  
Out Cycles

# The BIOFILM Puzzle

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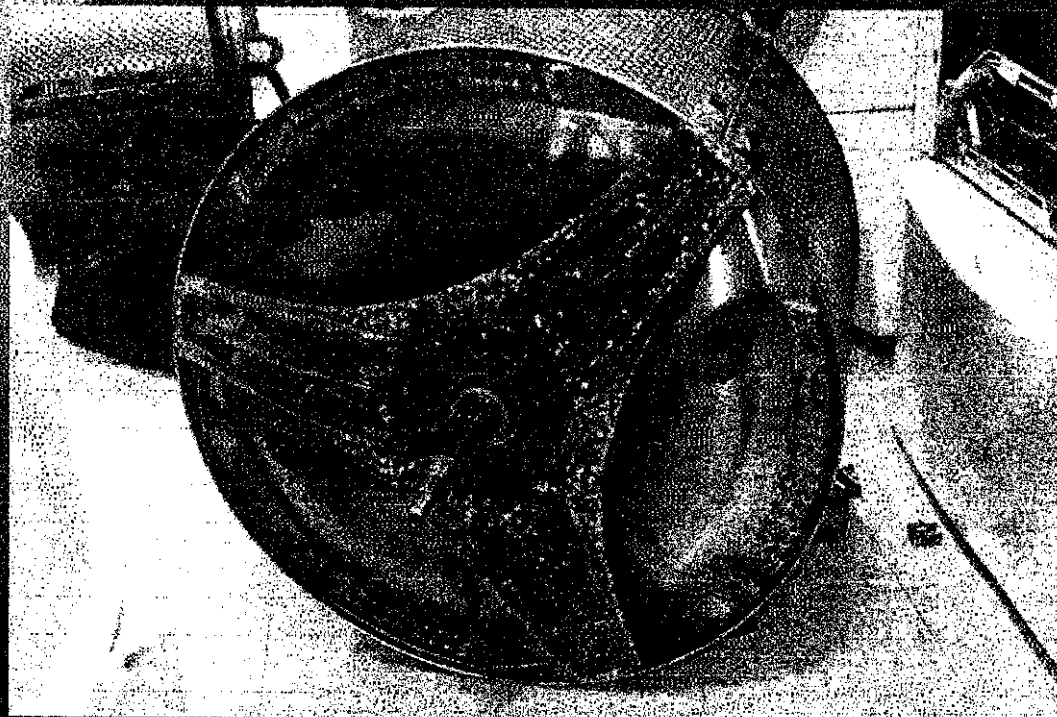
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## Washer Biofilm Background

- What is biofilm?
- Plaque that forms on your teeth is a type of bacterial biofilm.
- The "gunk" that clogs your drains is also biofilm
- The slippery rock in a stream or river is biofilm
- Buildup of inorganic and organic materials on washer surfaces is biofilm
- How does Biofilm form?
- Biofilm forms when bacteria adhere to surfaces in aqueous environments
- Bacteria excrete a slimy, glue-like substance that can anchor them to all kinds of materials such as metals, plastics, soil particles
- Biofilm can be formed by a single bacterial species, but more often biofilms consist of many species of bacteria, fungi, algae, protozoa, debris and corrosion products.
- Biofilm may form on any surface exposed to bacteria and some amount of water. Once anchored to a surface, biofilm microorganisms carry out a variety of detrimental or beneficial reactions, depending on the surround environmental conditions.

ACCESS



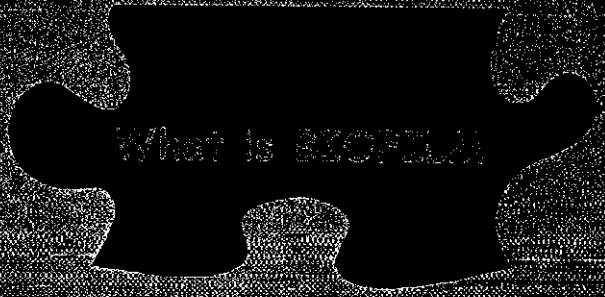
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# Access Biofilm Summary Project Update

## Statement:

- Reports continue to come in for mold, mildew, and malodor.
- Visible biofilm;
  - 1) soils,
  - 2) water minerals,
  - 3) detergent components,
  - 4) mold & bacteria.
- Components:
  - 1) bellows,
  - 2) tub & basket,
  - 3) dispenser,
  - 4) pump, drain hoses, &
  - 5) cross-bar.
- Traditional household cleaners - non-effective treatments.
- Maytag has settle a Class Action Law Suit for similar problems on their Neptune.
- Service and consumers need an effective tool for both clean out and maintenance.



## Access Biofilm Summary Project Update

### Problem Statement:

- Consumers continue to come in for mold, mildew, and malodor.
- Biofilm; soils, water minerals, detergent components, mold & bacteria.
- Components; bellows, tub, basket, dispenser, pump, drain hoses, & cross-bar.
- Traditional household cleaner have proved to be non-effective treatments.
- Maytag has settle a Class Action Law Suit for similar problems on their Neptune.
- Service and consumers need an effective tool for both clean out and maintenance.

### B. Root Cause:

**Any thing that causes soils to adhere to washer surfaces creates biofilm. Once biofilm starts it spreads rapidly and is difficult to stop. Bacterial and fungi quickly appear and begins feeding on the biofilm and produces malodors as by-products.**



## FACTS: Biofilm in Washers

Environment; a warm, moist, low air flow container provides the perfect conditions to support biofilm growth! Biofilm may take the form of mold and/or visual buildups.

- Biofilm documented in VA & HA platforms for 25 Years!
  - Anti-Mold claims are the #2 Asian washer selling point!
  - European Consumer Test Lab offer Habits Tips to control mold
- Mold/fungi and bacteria are normal components everywhere
  - Basement with mold will transfer spores to washer
  - Soils in consumer clothes loads will transfer bacteria
- HE washers may show > Biofilm due to low water levels
  - Low water wash temperatures may increase biofilm risks
  - High sudsing conditions increase biofilm
  - Use of non- HE detergents increases biofilm
  - Low air flow washers improve conditions supporting biofilm
  - Washer doors/lids should be open to increase air flow



## Biofilm in Whirlpool Washer

- Biofilm problem observed in most US washer platforms
- Whirlpool observations include LEAP, CALYPSO, and ACCESS
  - Malodors
  - Mold/Mildew
  - Soil/Detergent Buildups/Residues
- SIR are less than 1.0%, but higher in HE platforms
- Strategy established in Whirlpool to address issues
  - Technical Team assembled April '04 to investigate
  - Biofilm will be a growing problem for all manufacturers
  - Energy & Water Factor requirements will increase risks
  - Initial Fact Finding to understand issues and scope risks
  - Develop recommendations for consumers with existing units
  - Develop maintenance cycle(s) for future prevention/control
  - Address HE definitions & sudsing issues with Soap & Detergent Association

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3:

- High sudsing detergents create high suds levels in HE washers.
- Soils removed from the clothes loads float on these suds.
- Suds increase with increased washer mechanical action.
- Suds carry soils into washer areas that may not be flushed.
- 4) Use HE detergents!
- Suds impede the mechanical washer action & accelerates biofilm.
- Low wash temperatures > risk for all soils to simply float on the suds.
- Use of regular detergents at lower doses still creates too much suds.
- Consumers rarely leave washer door open to allow washer to dry out.
- High use of chlorine bleach increases corrosion, but a REALITY!
- Legal states nearly 100% assurance that ACCESS case will follow.
- Service & consumers need a tool for clean out and maintenance.
- All climates, but greater in warm, humid conditions.
- All parts of the world including Europe
  - 1) Northern Countries using lower temperature washes
  - 2) Exported Delta units to Asia
- With and without fabric softener
- With and without low chlorine bleach usage
- Consumer with a home mold issue will see rapid growth in w

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## ISSUES: Material

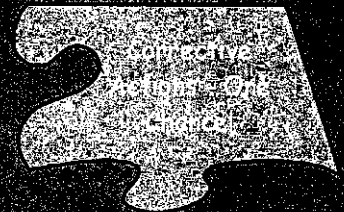
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## Access Biofilm Summary Project Update continued



### **Corrective Action:**

- Developed a **strong service cycle** for complete clean out in less than 1 hour.
- Developed a **user maintenance cycle**, to be run manually to minimize biofilm.
- New cycles requires new controls.
- Ideal: New cycle used by service & consumer to clean existing biofilm problems
- Resolution needed of material compatibility with USA's use of chlorine bleach
- Clorox suggesting Hypo-Bromide tablets may be less corrosive to aluminum.
- Suggestion to use a chlorine neutralizing agent as part of maintenance rinse cycle.

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## Specific Organism Identification

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Human Safety

Sample Name	Mold	Table Notes	Bacteria
David Cade	Cladosporium (50%) Fusarium (50%)	1,2,3 1,2,3	Pseudomonas aeruginosa
Ms. Junker (bellows)			
Ms. Junker (basket)	Penicillium (50%) Microsphaeropsis (1%) Yeast (49%)	1,2,3	Pseudomonas aeruginosa
Glossner 9/13 A	Aspergillus spp. (13%) Trichoderma (87%)	1,2,3 1,2,3	Pseudomonas spp. aeromonas hydrophila
Jim Miller	Penicillium (1%) Brospora spp. (99%)	1,2,3	aeromonas hydrophila Pseudomonas

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# Access Biofilm Summary Project Update

## Continued



### Next Steps:

- Schorndorf to deliver no later than late 1st Q'05.
- ONE launch/announcement for all brands.
- Maintenance cycle to be included in all future HE
  - Modified user manuals to include biofilm maintenance.
  - HORIZON: Opportunity to lead industry
  - CALYPSO: TBD
  - Soap & Detergent Association
    - 1) SDA Redefining HE detergents and HE machines
    - 2) Includes explanation of Biofilm the industry and consumer
    - 3) Includes washer maintenance cycle recommendations
- Working with CU to address biofilm in washers for '05

CU

Washer Issues

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## Completed

- 3/4 cup bleach dosage < critical concentration to clean in one application.
- 1) Requires 2-3 repeat cycles to clean
- 2) Minimum 1 full cup for 1 cycle clean-out
- Need fact based specification: aluminum cross-bar, stainless basket, and heater.
- Need to address cross-bar corrosion in HORIZON before it goes into product.
- Need in-lab procedure to create biofilm

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